GV-2166

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Paul Delabastita, et al **GROUP:** 1113

SER. NO. : (Cont. of Ser. No. 08/542,095) **EXAMINER:** M. Angebranndt

FILED : January 13, 1997

FOR : METHOD FOR MAKING A LITHOGRAPHIC PRINTING PLATE

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

REMARKS

Applicants have filed this FWC in order to afford the Examiner the opportunity to consider the following comments.

1. The Examiner's arguments for obviousness in the now abandoned parent application are merely based on a "pick and choose" policy. By hindsight and post facto argumentation, it is easy to find two pieces of prior art, which in (doubtful) combination add up to all of the features of claim 1.

2. It is submitted again that Saikawa nor Monbaliu refer to frequency modulation screening. As argued before, Monbaliu even directly points to autotypical screening.

3. It is reiterated that Stoffel studies image processing algorithms for halftoning contone images ("halftoning algorithms").

4. In the opening page Stoffel mentions some printing techniques for which halftone images are required, without coupling any halftoning algorithm to any specific binary output process.

5. The second paragraph of the abstract lists halftoning algorithms. The second paragraph of the introduction gives -independently from the above mentioned list of halftoning algorithms - a list of binary output devices. To the latter list of binary output devices, the chapter "Binary marking/display Technologies" adds more members. Here again, no specific halftoning algorithm is coupled to any specific binary output device or process.

6. The second paragraph of "Summary" (p. 1899) couples the list of binary output devices ("lithography, xerography, etc...) to the list of halftoning "algorithms investigated below". Again, no attempt is made to couple any specific halftoning algorithm with any specific binary output process.

7. It is purely speculative, without commitment in any way, to state that: "the [halftoning] algorithms investigated below are compatible in varying degrees with all of [the binary output processes]".

8. Also this paragraph remains completely neutral with respect to which halftoning algorithm is suitable for which binary output process.

9. After this general overview, not linking any specific halftoning algorithm with any specific binary output process, Stoffel reviews the history and present systems. In these reviews, explicit relations are established between members of the list of binary output devices and members of the list of halftoning algorithms:

10. Under "B. Halftone Imagery", lithography, letterpress and gravure (three binary output processes) are explicitly coupled to autotypical screening "high frequency line and dot structures were printed which have their width varied spatially". It is thus clear that their width or size is varied, not their relative distance as in frequency modulation screening. It is further asserted that - according to the autotypical screening on lithography - "an extremely large number of pictorial images daily" is created.

11. On Page 1904 under "Electronic Screening", "1) Definition", Stoffel refers to the "first technique (Talbot)". From the description further on it is clear that the halftoning process was autotypical. Further it is known by the man skilled in the art that this "first technique" refers to lithographic printing. As such, a relation is established between an autotypical halftoning process and lithographic printing.

12. On page 1904, right column, third paragraph, Stoffel couples "the graphics arts industry" with an "electronic analog of what is truly a photomechanical technique". Since the screen function shown in Fig. 15(b) is periodic, it

generates an autotypical halftone image. Reference is made to a "frequency, angle, and other properties", in the last line of the penultimate paragraph of page 1904, which definitely refers to an autotypical screening technology. The reader of the Stoffel article may read here a relation between graphics arts and autotypical screening.

13. The text on page 1905 goes on to discuss properties related to the autotypical halftoning process, and concludes at the last line of the penultimate full paragraph: "Virtually all mass-produced (magazines, newspapers, etc.) printed pictorial imagery is produced via this technique today". As is well known to the man skilled in the art, magazines and newspapers are printed by lithography. Here again, Stoffel relates lithography to autotypical screening.

14. The text on page 1906 refers to "display on a CRT" (left column) and "binary panel display technologies" (right column) for pseudorandom thresholding halftoning technique, which "results in a dispersed set of black and white dots instead of a single "dot" as in the analog of the photomechanical screening process" (four last lines in left column of page 1906). Thus, here Stoffel relates frequency modulation halftoning to CRT and panel.

15. The "graphic arts industry multifrequency screen function" referred to in the paragraph bridging pages 1906-1907 and listed under reference [42] as US-P-4,083,632 relates to multi-color electrophotographic printing by making use of a multi-frequency contact dot or line screen, having regions arranged in at least a high frequency (300 dpi) repetitive screen pattern and a low frequency (85 dpi) repetitive screen pattern, forming half-tone dots for reproducing a color transparency as enlarged or size for size color opaque copies. A lens 37 is adopted to transmit therethrough only the low frequency pattern. Hence, the charged portion of the photoconductive surface is irradiated only by the low frequency image component. This way, Stoffel relates autotypical screening with electrophotography.

16. The "graphic arts industry "random dot" screen function" referred to in the paragraph bridging pages 1906-1907 and listed under reference [43] as US-P-

3,493,381 relates to a graphic arts contact screen for photomechanical reproduction, having more than one type of independently variable dot, to obtain a screen or halftone print that has dots that vary in size and number, with a variable or different ruling (X lpi, X $\sqrt{2}$ lpi, 2 X lpi), in the highlights, middletones and shadows. This type of screen is disclosed as especially useful in photoengraving (column 3, lines 63-64). This patent also discloses a contact screen, particularly applicable in gravure work (column 4, lines 13-14), where the size of all dots are the same and the gradations of density are obtained by changing only the number of dots (column 4, lines 8-10). This way, Stoffel relates autotypical screening and frequency modulation halftoning with photoengraving and gravure work respectively, which is remarkably different from lithographic printing.

17. In the last line of the penultimate paragraph of the left column on page 1907, Stoffel guides the man skilled in the art to "motivate one to utilize ordered dither thresholding for workstation displays". Thus Stoffel relates frequency modulation halftoning to workstation displays.

18. The right column of page 1907 relates error diffusion, i.e., a frequency modulation halftoning technique to COM (computer output microfilm) and binary displays. As stated in an earlier amendment, the section on "error diffusion" refers to applications by a COM (computer output microfilm) and binary displays only. The reference [45] by Floyd and Steinberg - the text of which was added for the convenience of the Examiner - considers an AC plasma panel or a dot matrix printer only (see under title "II. Constraints"). The reference [44] by M.R. Schroeder - the text of which was added for the convenience of the Examiner - discusses a 4-level microfilm plotter under computer control and a single optical display only. A plasma panel, a dot matrix printer and a microfilm are "single hard copy" systems only, not suited for making identical reproductions from the same "printed image" and very dissimilar from lithography.

19. It is submitted that the advantages discussed by Stoffel in conjunction with frequency modulation halftoning, do not give any incentive to the man skilled in

the art to use frequency modulation halftoning specifically for lithographic printing.

20. The tables discussed in the top of the right column on page 1908 discuss the properties of the different halftoning algorithms, but do not relate them to any of the binary marking processes. The author asserts that "a number of tradeoffs [must be evaluated] in order to select the optimal procedure for a given application".

21. It is thus left to the man skilled in the art to select the right halftoning algorithm, which fits for the given output process. By hindsight reasoning it may be logical to select frequency modulation for lithography, but this was not so obvious at the time when the invention was made, and is not disclosed by Stoffel.

22. Chapter VI on pages 1908-1919, discusses different halftoning algorithms for halftone input. These algorithms refer to an input different from the input according to our inventive concept. Moreover, without any reference to any specific binary output process.

23. In the conclusions on page 1919, back again a list of binary output processes is recited, without referring specifically to any of the halftoning algorithms.

24. From the above it is clear that Stoffel discusses several embodiments. The Examiner now picks from one Stoffel embodiment related to autotypical screening a binary output process, i.e. lithography. From another Stoffel embodiment, related to plasma displays and microfilm, the Examiner picks a halftoning method, i.e. error diffusion halftoning. Then the Examiner states that Stoffel teaches error diffusion halftoning in combination with lithography, and goes to the prior art disclosed by Saikawa and Monbaliu to pick the missing features- related to lithography- according to claim 1. The Examiner is guided by the teaching of claim 1 to pick the features he needs from the two different Stoffel embodiments and from the Monbaliu or Saikawa reference. An obviousness argument cannot be based on such a hindsight reasoning, combining two different and unrelated

embodiments from one reference together with a second reference.

25. The Examiner's allegation that "Stoffel .... teaches various techniques for ... screening images ... to produce halftone images ... useful with binary output devices such as lithography" must not be understood in the sense that all halftoning techniques taught by Stoffel are useful per se with lithography.

26. The Examiner refers to pages 1907, 1908, 1915, 1916. As indicated by the Examiner, applicants do see a description of the process of error diffusion, and the benefits. In the next paragraph, the Examiner asserts that error diffusion taught by Stoffel is a frequency modulation screening technique. Applicants submit that this implies it to be a halftoning algorithm. This means that the Stoffel pages referred to by the Examiner relate to halftoning algorithms. The Examiner then asserts that Saikawa and Monbaliu relate to techniques of producing printing plates.

27. The Examiner then alleges that it is obvious to include a specific halftoning algorithm taught by Stoffel in a printing plate technology of Monbaliu or Saikawa. Therefore, the Examiner brings together two completely different technical fields, i.e.:

- the field of halftoning algorithms; and,
- the field of printing plate production, more specifically, lithography.

28. The Examiner further argues that all this is "based upon the disclosure of Stoffel, et al '(1981) that this technique (=error diffusion) is applicable to **lithography**. Applicants do not see any reference to **lithography** on the pages referred to by the Examiner. As indicated above under point 18, Stoffel discloses error diffusion only for application to COM and binary displays on page 1907, right column, referred to by the Examiner.

29. The Examiner alleges that "the applicants admits that Stoffel, et al specifically states that the use of the algorithms described are compatible with lithography". Applicants submit that this statement must be seen in full context, without leaving out the now underlined words, as presented in earlier amendments:

30. "the algorithms described are compatible with lithography" is a deceptive perversion of the text: "Although lithography, xerography, etc. have different microstructural characteristics, the algorithms investigated below are compatible in **varying degree** with all of them." (emphasis added). Stoffel does not concentrate on lithography alone."

It is reiterated that it is merely the intention of the author to limit the discussion to a still extensive set of output devices. It is speculative to derive from this sentence that Stoffel discloses here the use of frequency modulation halftoning for lithographic printing, since there is no such indication in the whole Stoffel article, whereas lithographic printing is explicitly suggested for autotypical screening only.

30a. "Although Stoffel states that the algorithms investigated are compatible in varying degrees with lithography, xerography, etc., Stoffel does not specifically state that the use of frequency modulation is suitable for lithography."

30b. "Stoffel reviews different screening techniques and mentions that "Although lithography, xerography, etc., have different ... the algorithms investigated below are compatible in varying degrees with all of them" (page 1898, left column, summary). This does not mean that a particular screening technique reviewed is actually used in offset printing."

31. Applicants submit that it would be speculative at the time the invention was made and a fortiori at the time the Stoffel reference was published, to derive from the Stoffel's assertion that error diffusion is compatible with lithography.

32. About "optimization" as referred to by the Examiner, the applicants submitted: "Stoffel does not concentrate on lithography alone. Selecting a frequency modulation halftoning technique is not just "some optimization to reach its full potential". The context of this assertion is thus that a non-obvious selection from the wide gamut of available halftoning algorithms must be made in order to solve specific problems - not addressed by Stoffel - which occur in the specific field of the preparation of lithographic printing plates.

33. Reading these assertions in their right context, gives solid support for the position of the applicants.

34. The Examiner goes on arguing that "some optimization is required for each process". Applicants respectfully submits that there is no such process disclosed in Stoffel, incorporating frequency modulated halftoning in lithography. Such process being absent, it makes no sense to speculate on "some optimization".

35. The Examiner alleges that "passages [from Stoffel] cited by the applicants specifically point out the described techniques [i.e., halftoning algorithms] are general to processes [i.e.binary output processes] that they are taught as useful with and not directed to any particular [binary output] process." Applicants respectfully disagree with the Examiner. It is speculative to derive such a statement from the Stoffel reference. The Stoffel reference, nor the references cited in it - as discussed herein before - relates any form of frequency modulated screening to lithographic printing. Therefore, applicants request the Examiner to withdraw the rejection.

36. The arguments of the Examiner that the "output of the lasers are controlled by digital data to produce the image" cannot be found either the Saikawa nor the Monbaliu reference. The only sentence which in these references refers to "screening" is Monbaliu '156, column 17, lines 54-56: "for the 40% dot and for the 20% dot and averaged for 3 screen with different lineatures (100, 110 and 120 lpi)". Since lineatures are given, this refers to autotypical screening.

37. With respect to the Examiner's assertions on tope of page 7, applicants add

to the Examiner's point that neither Saikawa et al '811 or Monbaliu et al '156 teach using a controlling means for performing the exposure in an imagewise manner, apart from failing to teach using a physical masking element with the laser exposure process. Both Saikawa and Monbaliu remain silent about the way how the light intensity reaching the photosensitive material is modulated.

38. Scanning of the image is skimmed by Stoffel. Screening of the data is disclosed by Stoffel for various binary output devices. The use of screening of the data in "lithography" is disclosed by Stoffel only for autotypical screening.

39. The only techniques disclosed with lithography in the Stoffel reference is autotypical screening, see points 10, 11, 13. The Examiner is reminded to the fact that his citation of Page 1898 column 1, paragraph 2, line 3 reads (underlined): "As a further restriction, the pictorial "encoding" is restricted to binary output devices such as plasma display panels, laser xerography, lithography, or ink jet printers. Stoffel just states that he will restrict the discussion of the numerous binary output devices to the list given there, i.e.:

plasma display panels,

laser xerography,

lithography, or

ink jet printers.

This list already covers a tremendous amount of binary output devices. Stoffel does not state that every pictorial "encoding" technique is really applicable to all these types of binary output devices.

40. Stoffel does not teach the use of frequency modulated screening in conjunction with lithography. Thus it cannot be argued that Saikawa and Monbaliu use the same terminology in their abstracts.

41. The Examiner alleges finding a way "establishing a linkage between the arts and motivation to combine

- the teachings of Stoffel et al (1981) with
- those of the lithographic arts, including Saikawa, et al '811 and

Monbaliu et al '156. The applicants hold this is an assertion that "the teachings of Stoffel" do not relate to "the lithographic arts". In fact, Stoffel discusses various techniques of halftoning algorithms, and in the discussion of each specific halftoning algorithm, Stoffel refers to a binary output process for which the halftoning algorithm may be used, without going into detail about the binary output process itself.

42. Any teaching of Stoffel, disclosing a frequency modulated halftoning technique, cannot be combined with the teachings of the lithographic arts, since there is no linkage established as such by Stoffel.

43. The Examiner argues that "the use of lithography as a binary output device is disclosed by Stoffel et al". Applicants merely state that lithography is given as one example of a binary output device. The use of lithography is not the object of the Stoffel's disclosure. Lithography is merely one of the binary output processes to which the discussion is restricted.

44. The Examiner states that "the laser exposure processes of both Saikawa et al '811 and Monbaliu et al '156 represent output devices". The Examiner however fails to provide the places where Saikawa or Monbaliu go into detail about output devices. Moreover, if both Stoffel and Saikawa or Monbaliu refer to "output devices", are these necessarily comparable output devices? Even if these output devices were comparable, would they perform the same methods?

45. With respect to the Heidelberger Druckmaschinen, it is submitted that in the present case the fields of endeavor are clearly different relating to:

- the field of frequency modulated halftoning, i.e. error diffusion
- the field of COM (computer output on microfilm) or binary displays
- the field of the preparation of lithographic printing plates.

This is a clear divergence, since one copes with conversion of images, the other with visualizing information on film or display, and the third with the chemical processes of making a lithographic plate. Whether the Stoffel reference is "analogous art" is a question of fact. The fact given that this invention is presented, is an easy opportunity to find two pieces of prior art (Stoffel and

Monbaliu) the combination of which delivers all the features of claim1, taken from various places in different and unrelated embodiments from both references.

46. With respect to In re Geiger, it is submitted that:

- 1) "error diffusion" is taken from one embodiment in Stoffel;

-2) "lithography" is taken from another non-related embodiment in Stoffel; and,

-3) the other features of a lithographic printing plate according to claim 1 are taken from Monbaliu or Saikawa.

No direction was provided from 1) to 2) or vice versa in the Stoffel reference. Neither was there any direction provided from 1) to 3) in the Stoffel reference, or vice versa in either the Saikawa or Monbaliu reference. In contradiction with the Examiner's allegations, no direction is found within Stoffel et al which directs frequency modulation halftoning on to the lithographic arts. Thus, no one of ordinary skill in the art would be directed from error diffusion to lithographic printing in the Stoffel reference and further on to lithographic printing plates and their manufacture, since the chapter "Binary Marking/ Display Technologies" does not give any lead to such direction, even not if somebody could pick somewhere the word "lithography" in a context not related to "error diffusion" or "frequency modulated halftoning". Therefore, applicants submits that the rejection cannot be reasonably maintained.

47. With respect to the Peterson reference, in view of Stoffel, it is submitted that also there the Examiner skips the step of lithography. It is true that Stoffel discloses frequency modulation screening techniques, although only for COM and binary displays. There is no link between frequency modulation screening techniques and lithography in the Stoffel reference. Therefore, there is no incentive to include frequency modulation screening techniques in the lithographic techniques of producing printing plates disclosed by Peterson.

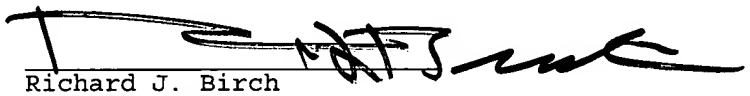
48. Stoffel does not teach benefits for error diffusion in conjunction with lithographic printing. The benefits taught by Stoffel in conjunction with error diffusion are not relevant for the current invention. The benefits taught by

Stoffel in conjunction with lithography refer to embodiments disclosed in the sections discussing lithography, which all relate to autotypical screening.

49. The Examiner alleges that Stoffel discloses that the error diffusion technique is applicable to lithographic, letterpress and gravure printing. It is submitted that the last full paragraph on page 1898 refers to these three techniques in conjunction with "the 8th century" and serves to discuss the need to "generate tow-tone microstructure". No hint is seen towards frequency modulated halftoning in conjunction with these techniques.

A Terminal Disclaimer has been filed in applicants' co-pending application Ser. No. 08/542,094. Applicants' attorney will file a Disclaimer in the present application as soon as the new serial number has been received from the Patent Office.

Respectfully submitted,



Richard J. Birch
Reg. No. 20,895
Suite 125
20 William Street
Wellesley, MA 02181
617-237-1819
Attorney for Applicants